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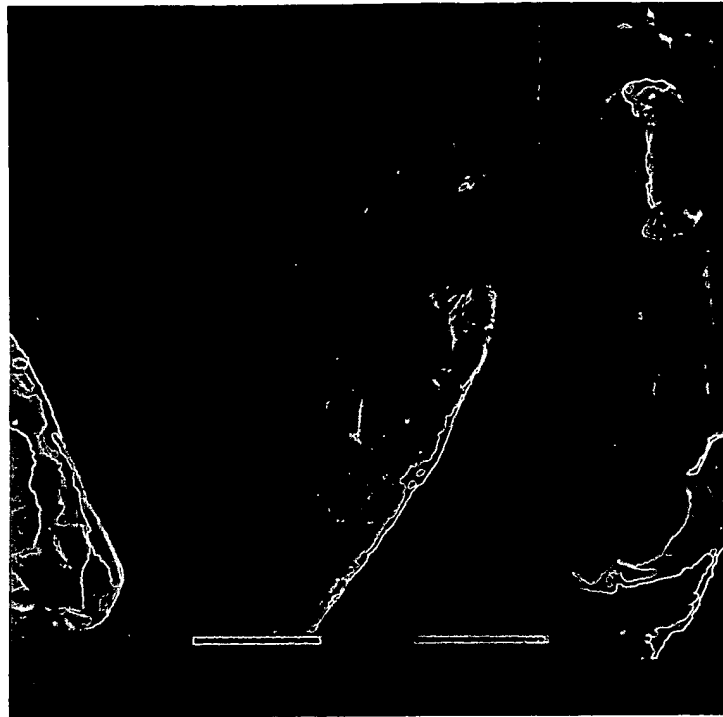
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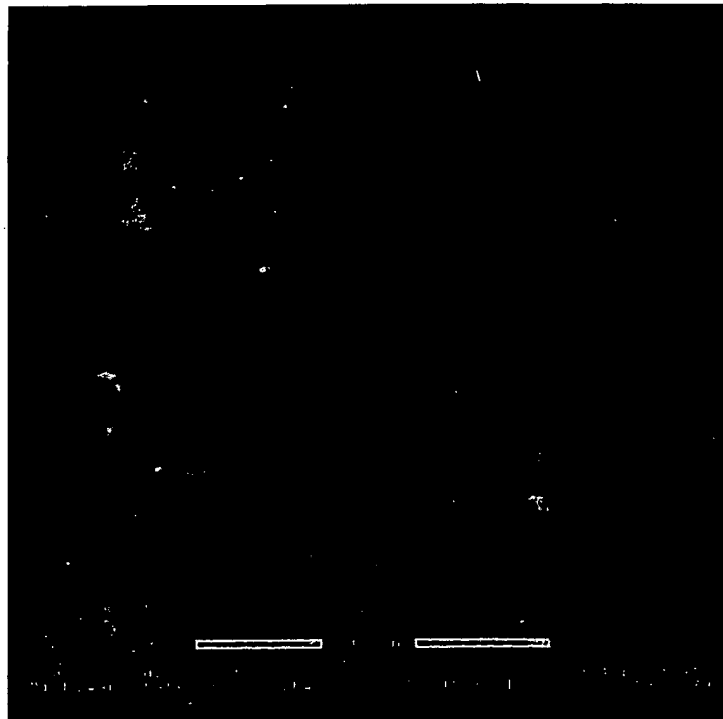
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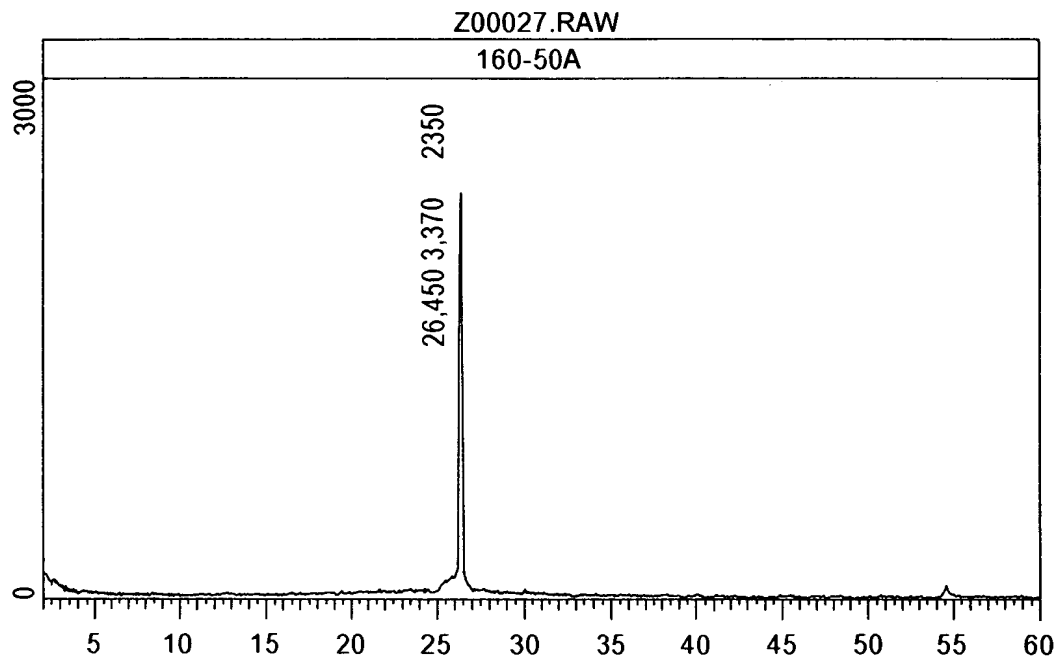
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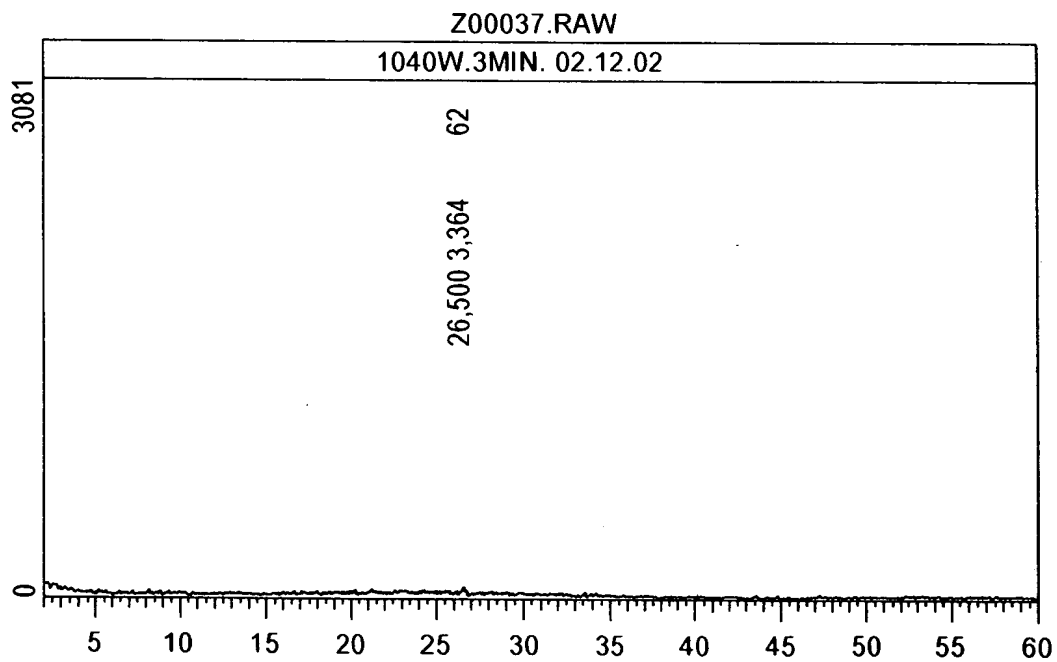
**FIG. 1** Intercalated Natural graphite Flakes



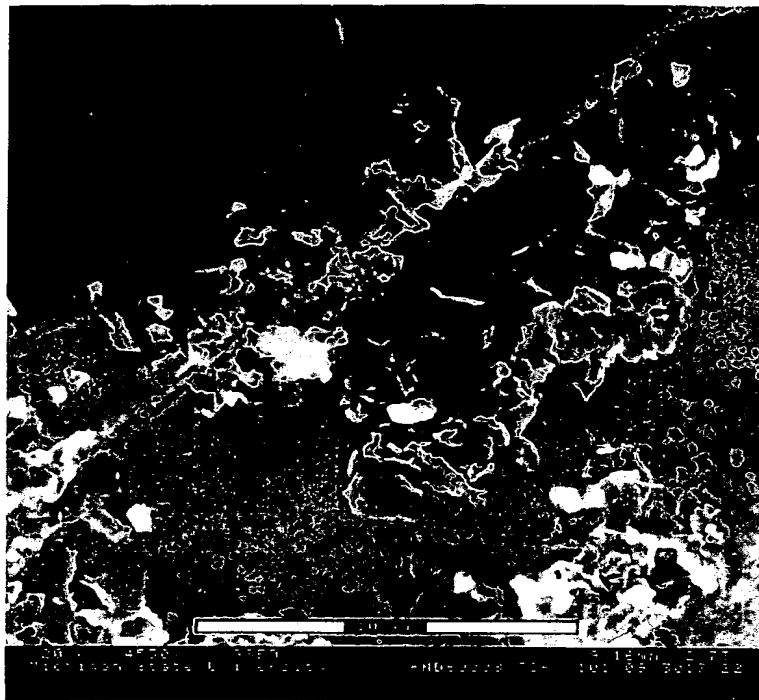
**FIG. 2** Expanded Natural graphite Flakes by Microwave



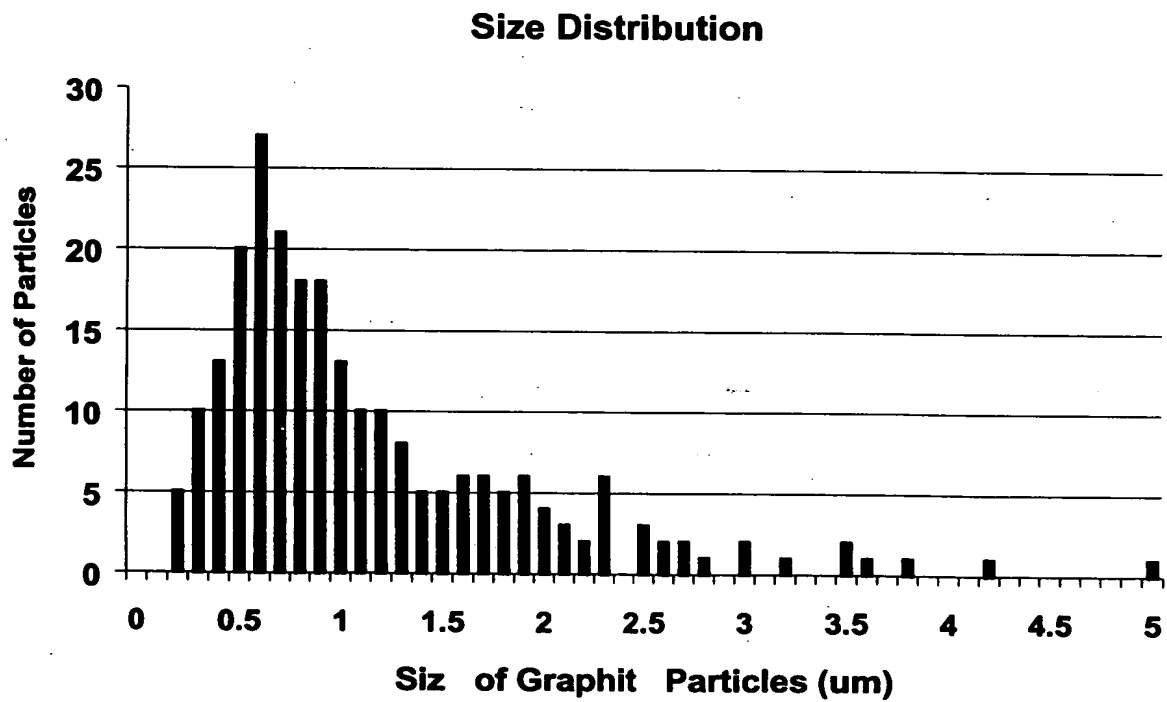
**FIG. 3** X-Ray Diffraction Pattern of Intercalated Natural Graphite



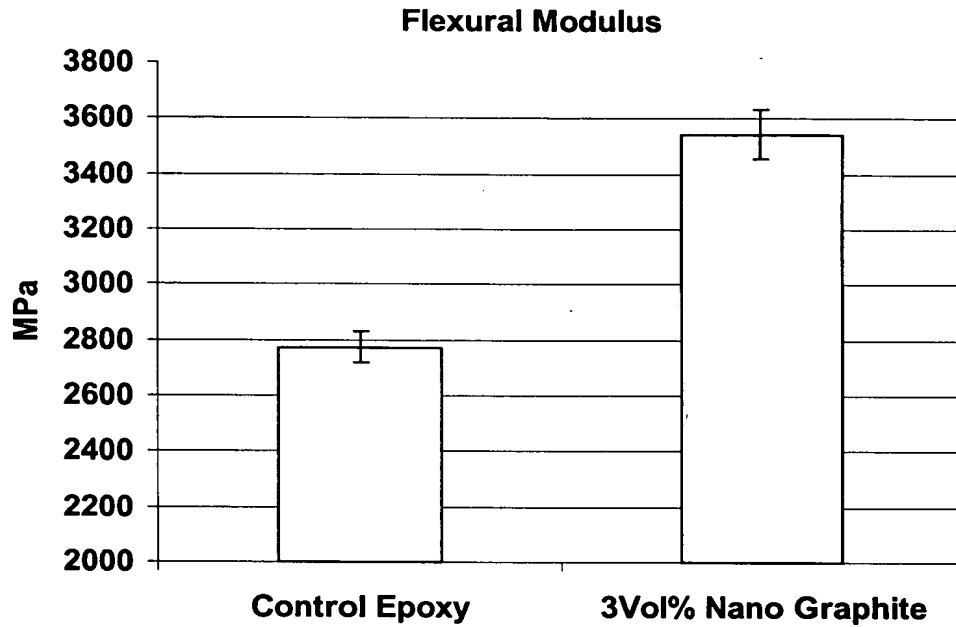
**FIG. 4** X-Ray Diffraction Pattern of Intercalated Natural Graphite



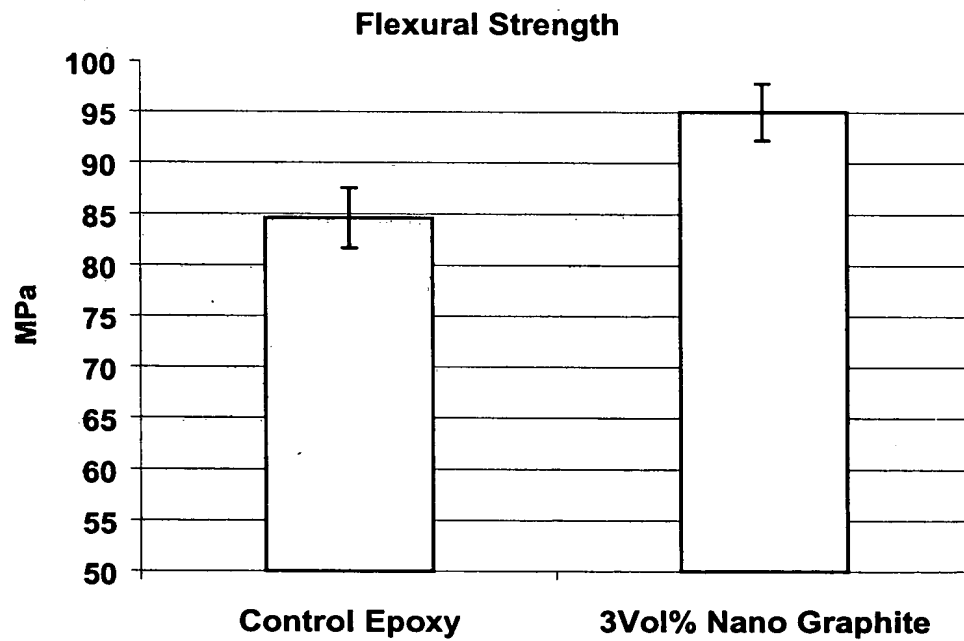
**FIG. 5** Exfoliated Graphite Platelets



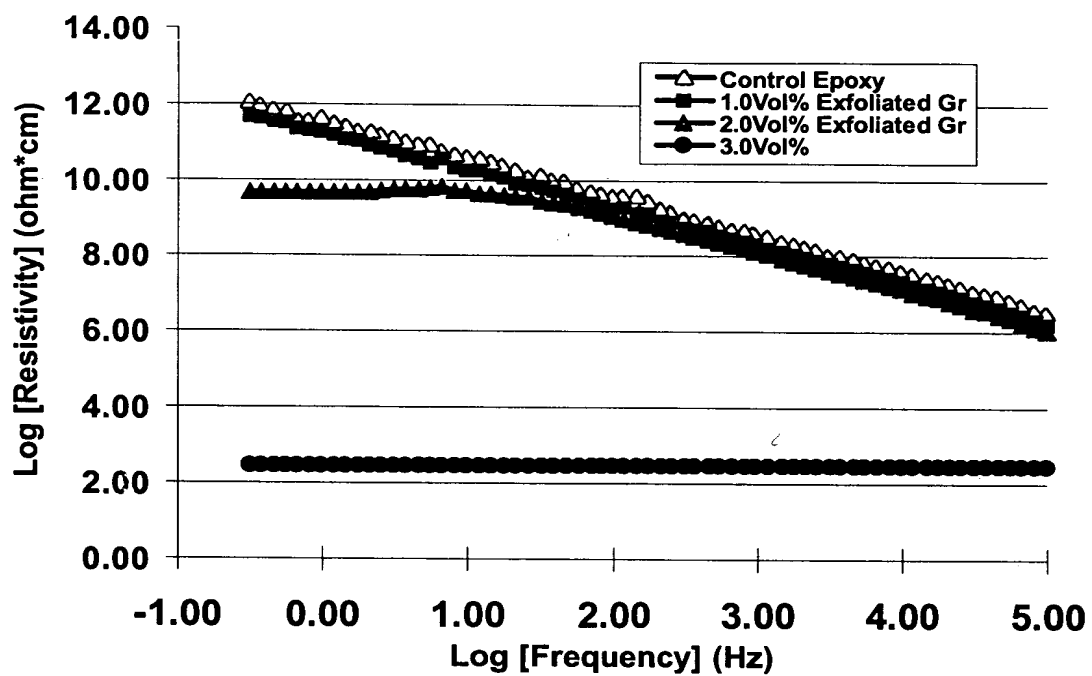
**FIG. 6** Size Distribution of Exfoliated Graphite Platelets



**FIG. 7** Flexural Modulus of Control Epoxy and Graphite Nanoplatelets reinforced Composite

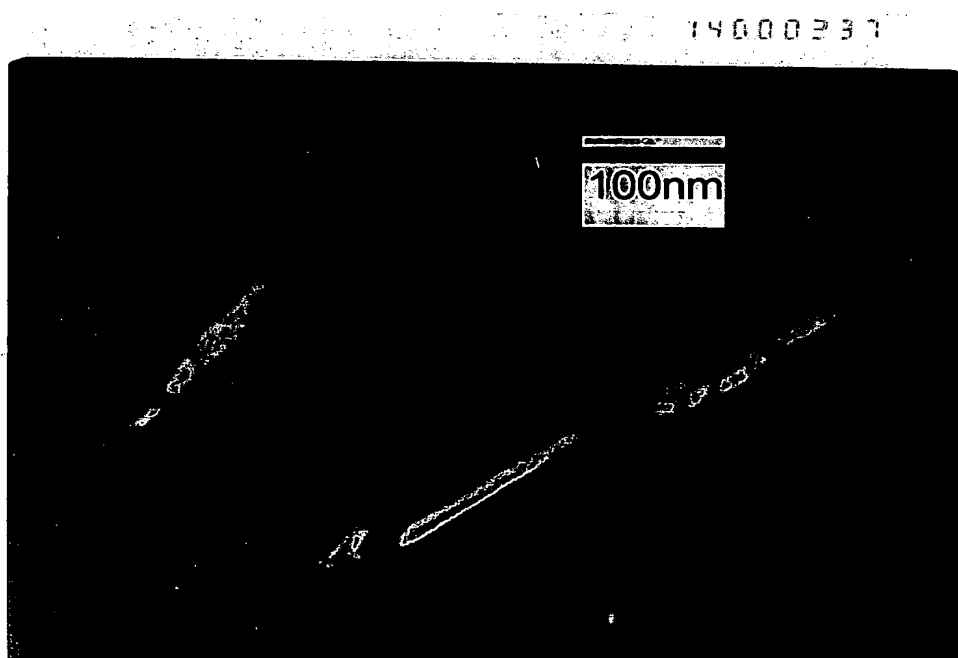
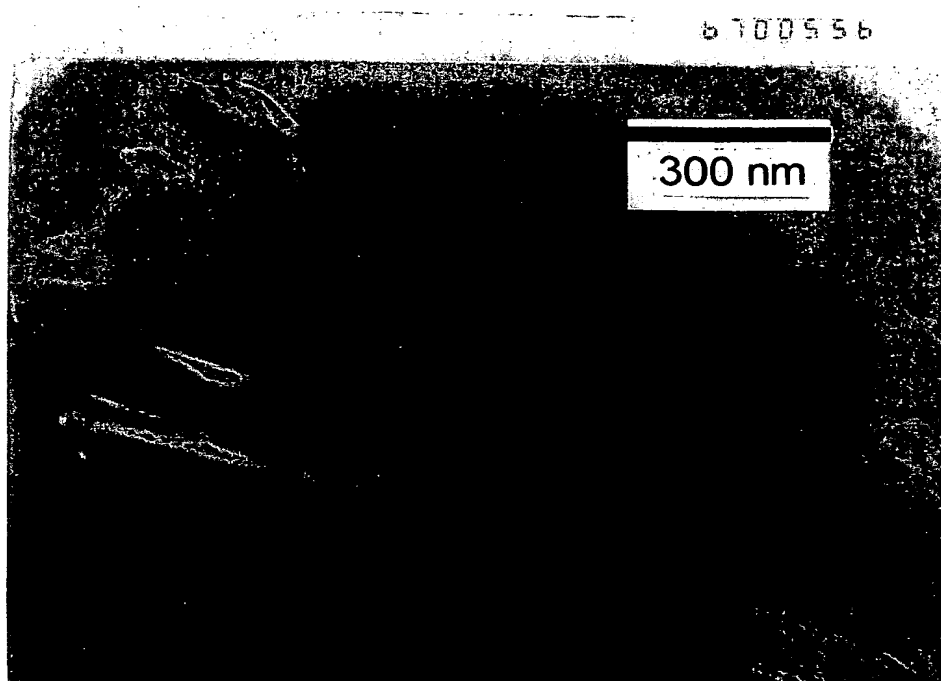


**FIG. 8** Flexural Strength of Control Epoxy and Graphite Nanoplatelets reinforced Composite



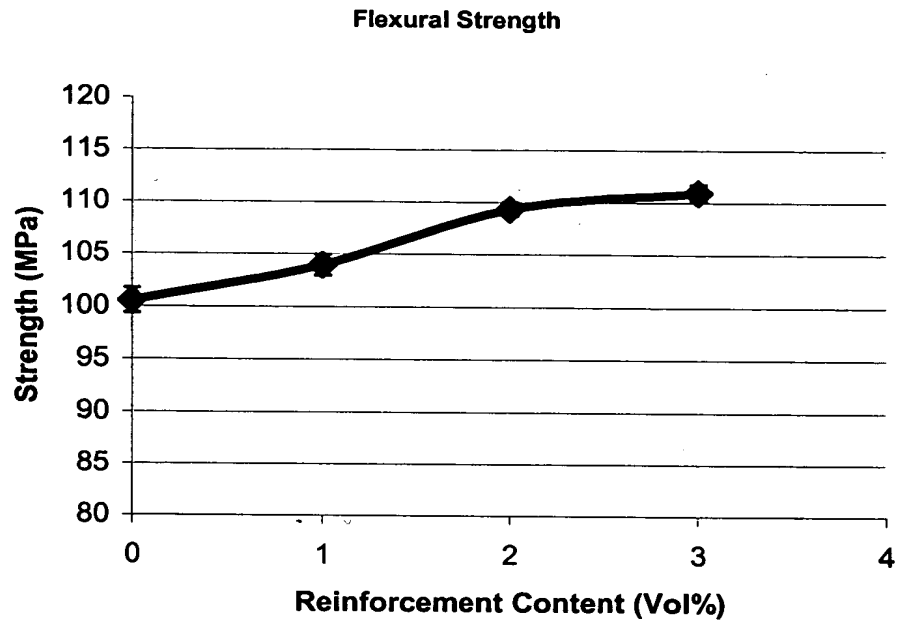
**FIG. 9** Resistivity of Control Epoxy and Graphite Nanoplatelets reinforced Composites

**FIG. 10A**

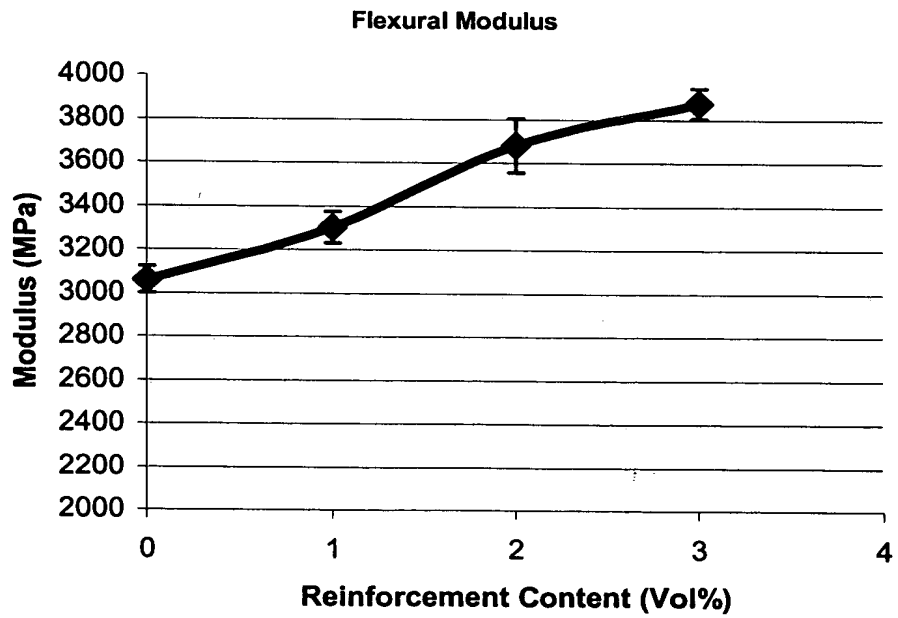


TEM Images of Graphite Nanoplatelets in Polymer Matrix

**FIG. 10B**



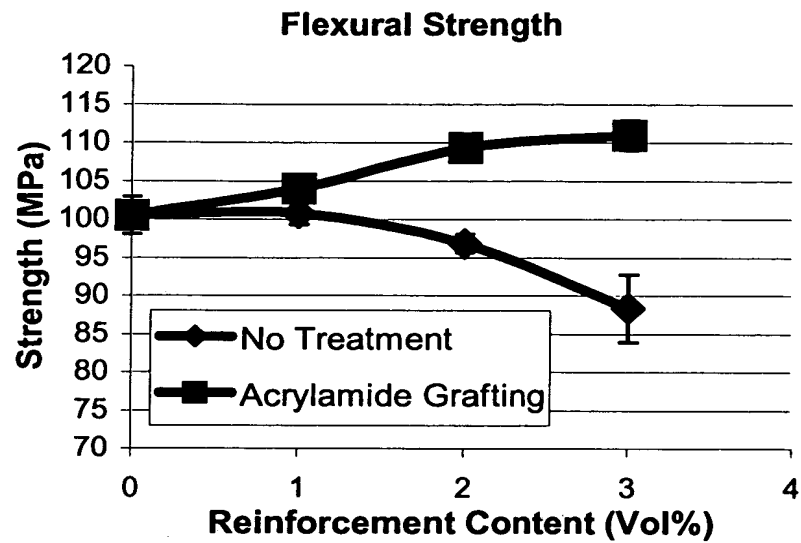
**FIG. 11**



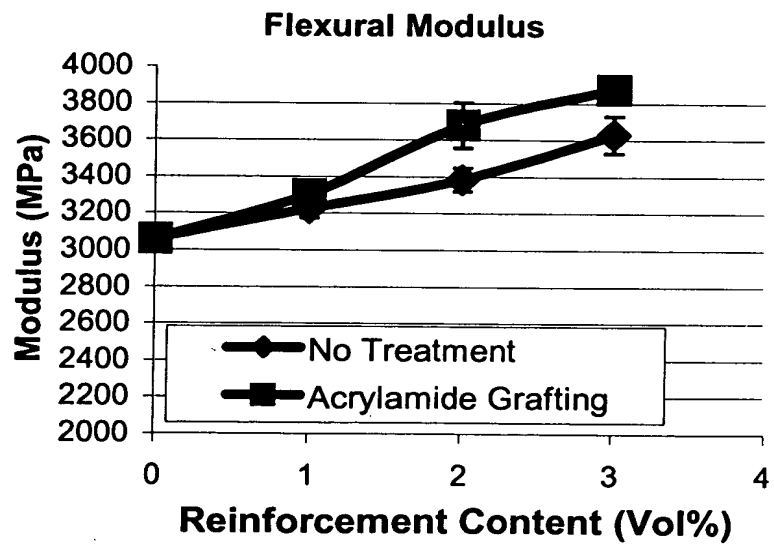
**FIG. 12**



(a) Effect of Acrylamide Grafting

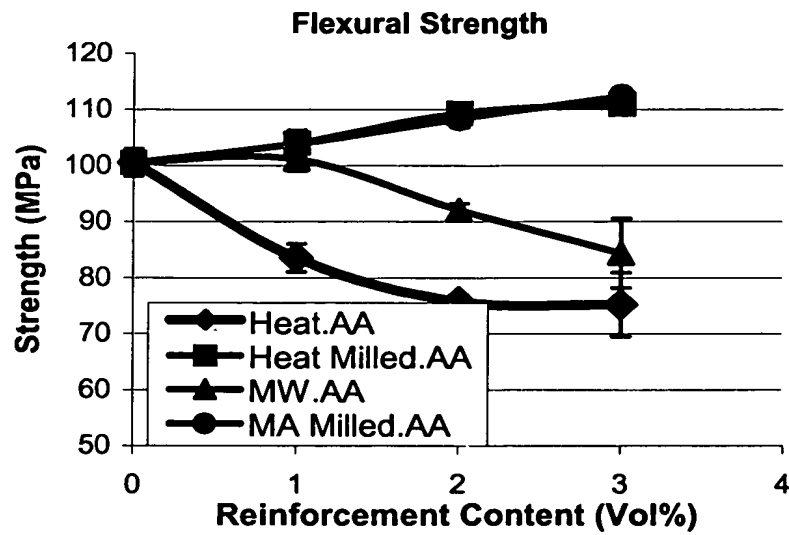


**FIG. 13**

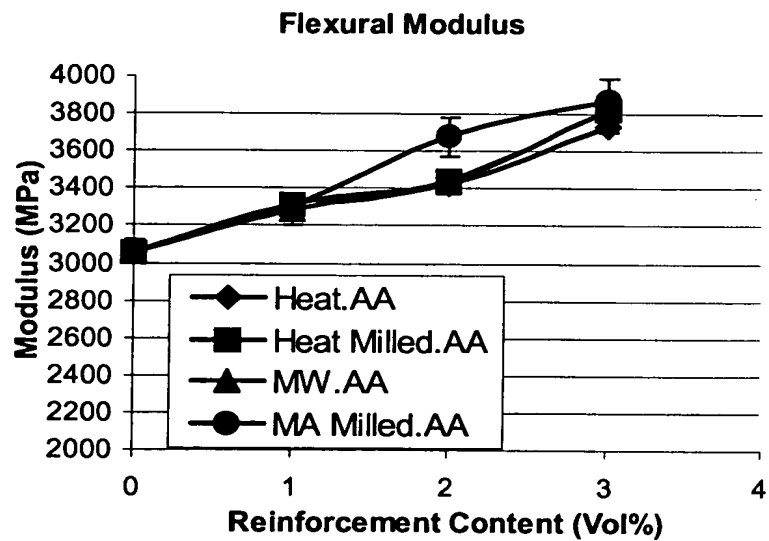


**FIG. 14**

(b) Effect of Exfoliation Method and Milling

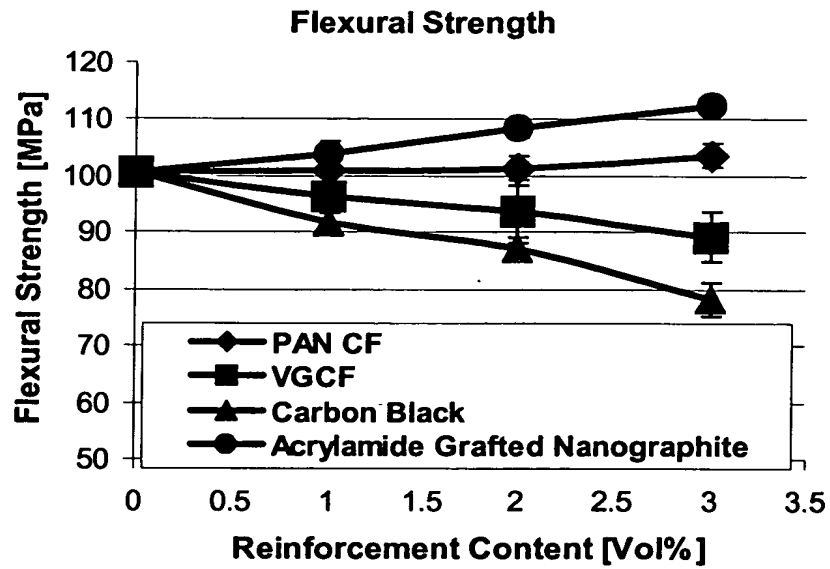


**FIG. 15**

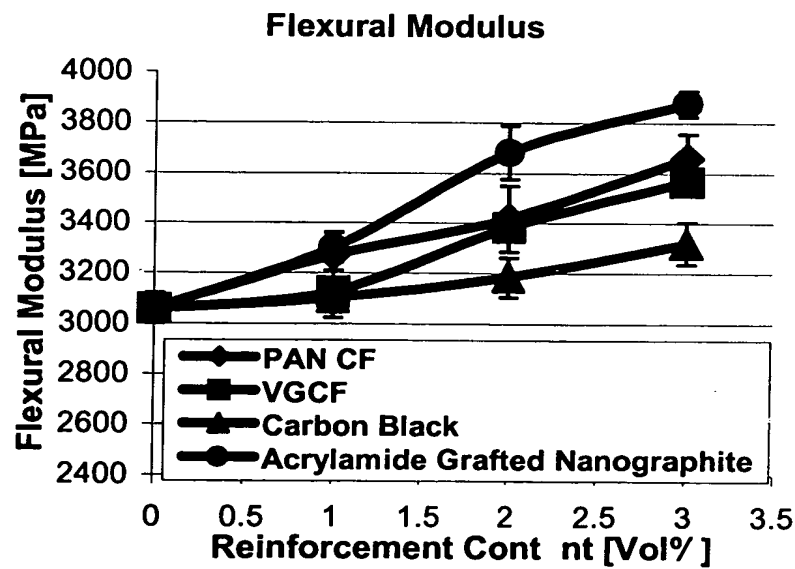


**FIG. 16**

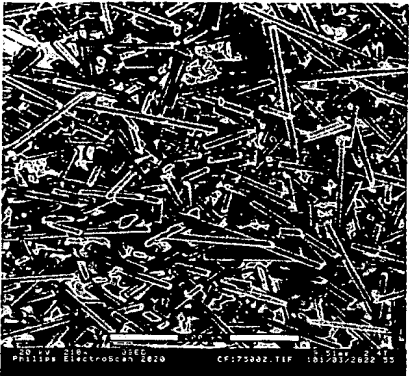
(c) Comparison to Other Carbon Materials



**FIG. 17**

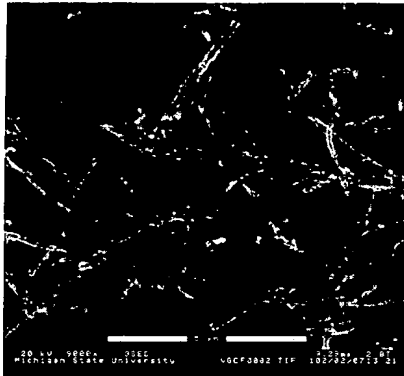


**FIG. 18**



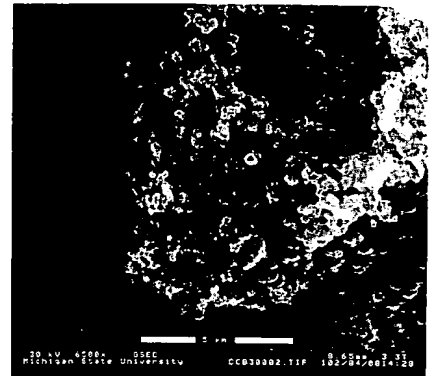
A: PAN based Carbon Fiber  
(Scale Bar = 200um)

**FIG. 19**



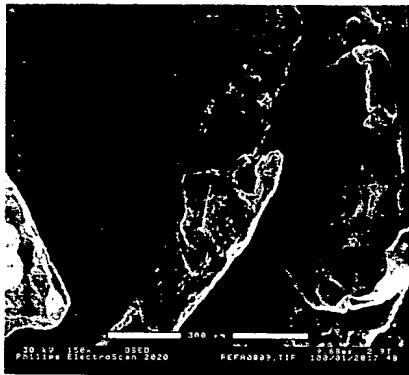
B: VGCF  
(Scale Bar = 5um)

**FIG. 20**



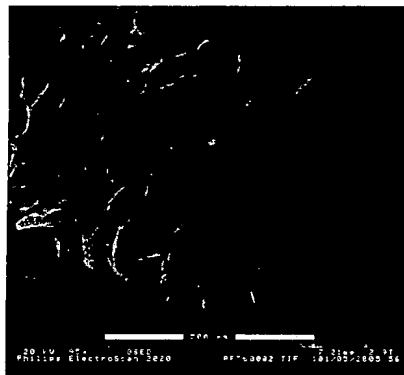
C: Carbon Black  
(Scale Bar = 5um)

**FIG. 21**



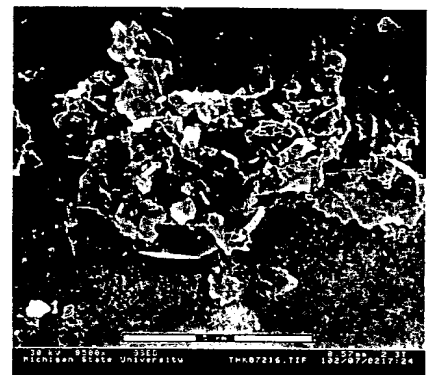
A: As-received Graphite  
(Scale Bar=300 um)

**FIG. 22**



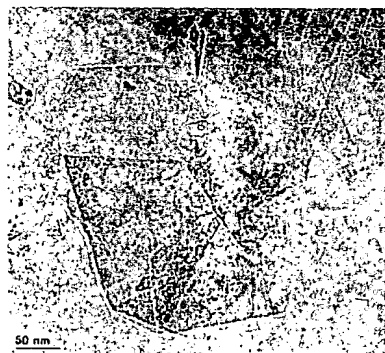
B: Expanded Graphite  
(Scale Bar=500 um)

**FIG. 23**



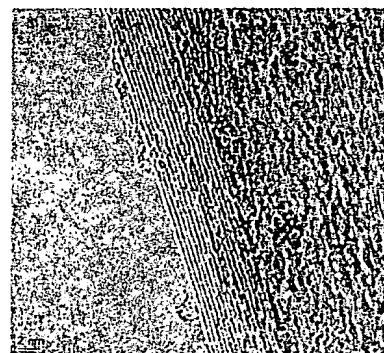
C: Pulverized Graphite  
(Scale Bar=5 um)

**FIG. 24**



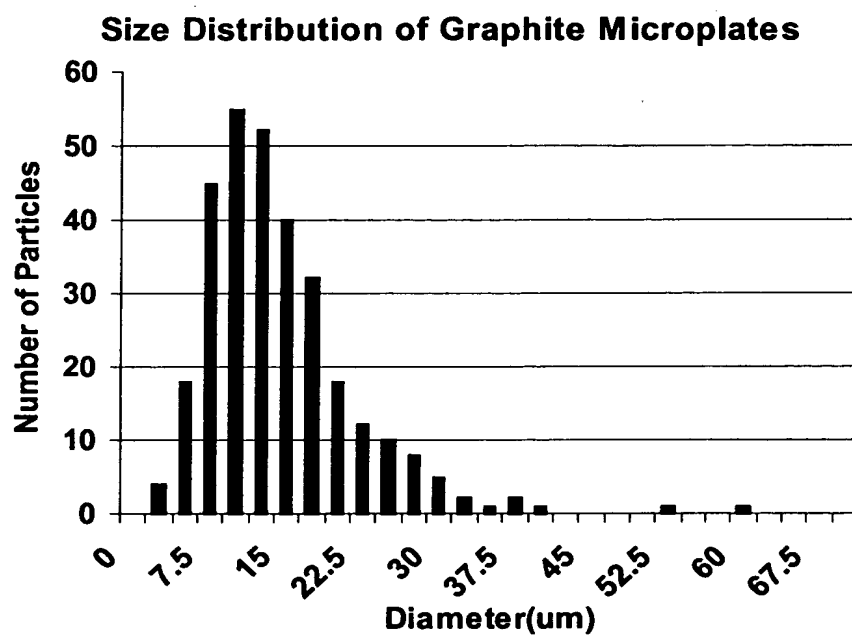
A: Scale Bar=50 nm

**FIG. 25**

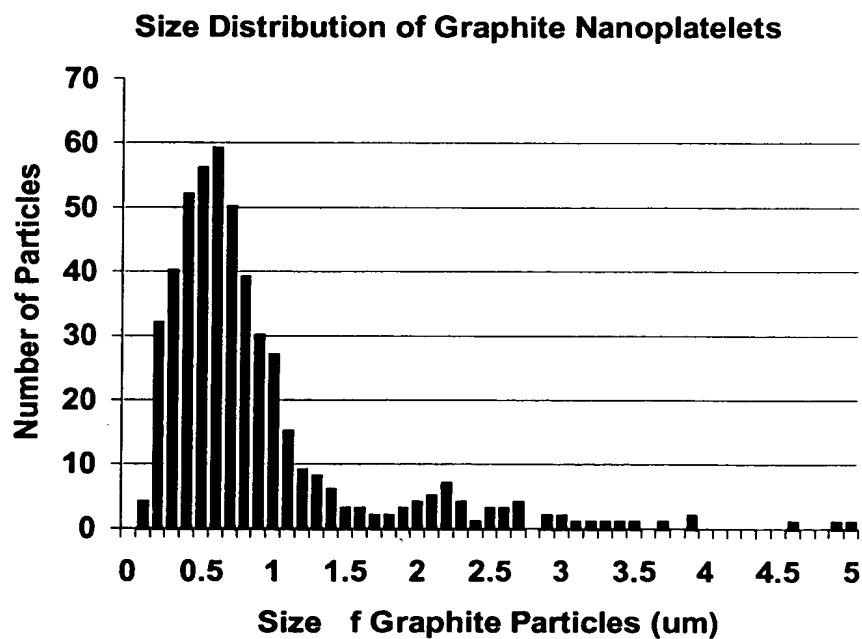


B: Scale Bar=2 nm

**FIG. 26**



**FIG. 27**



**FIG. 28**

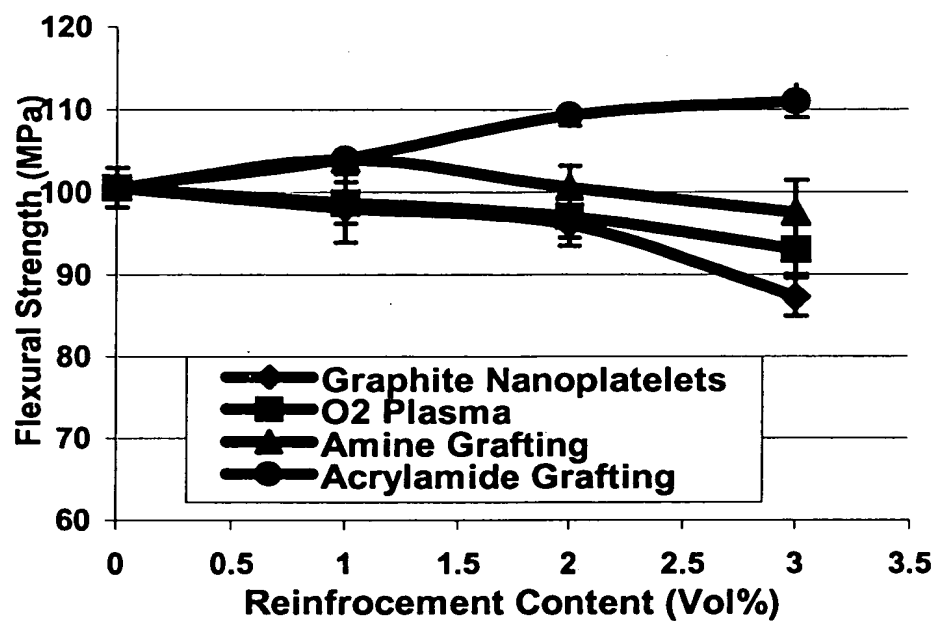


FIG. 29

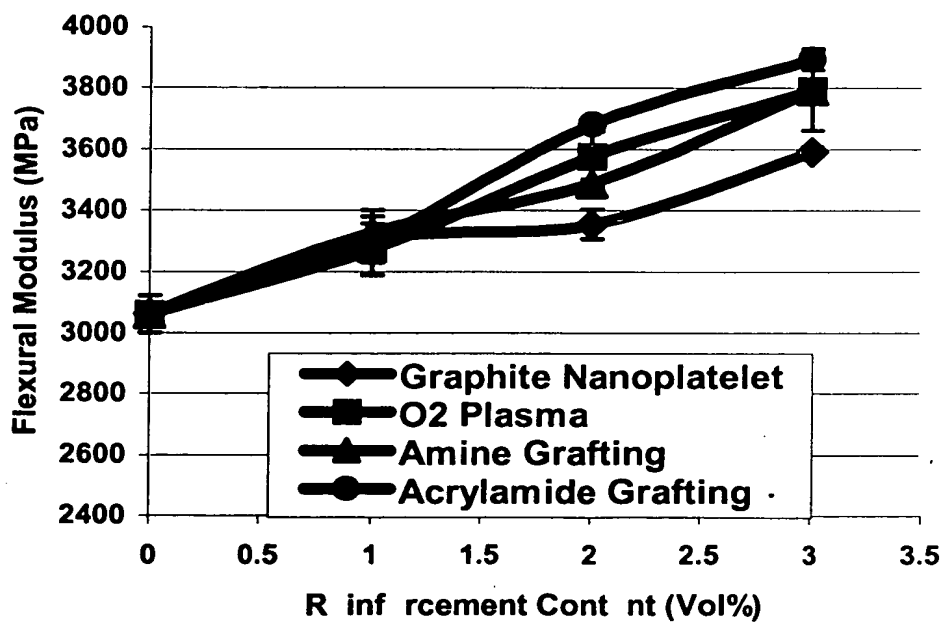


FIG. 30

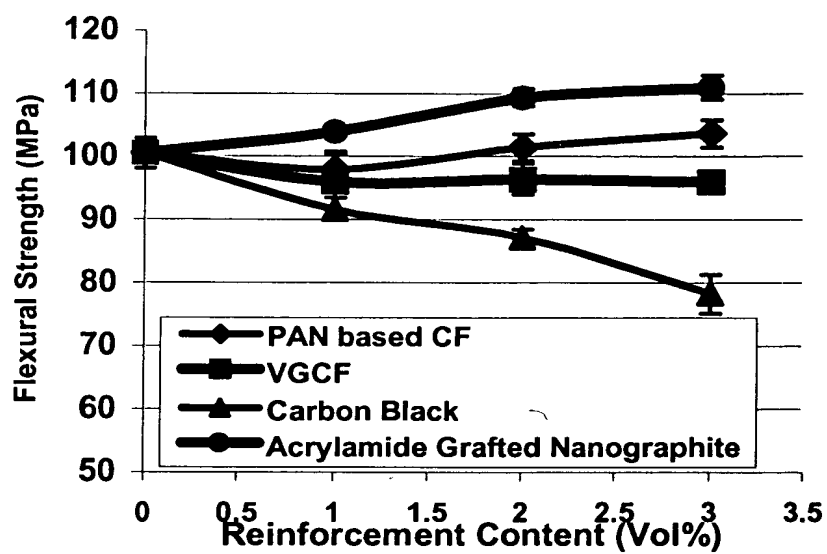


FIG. 31

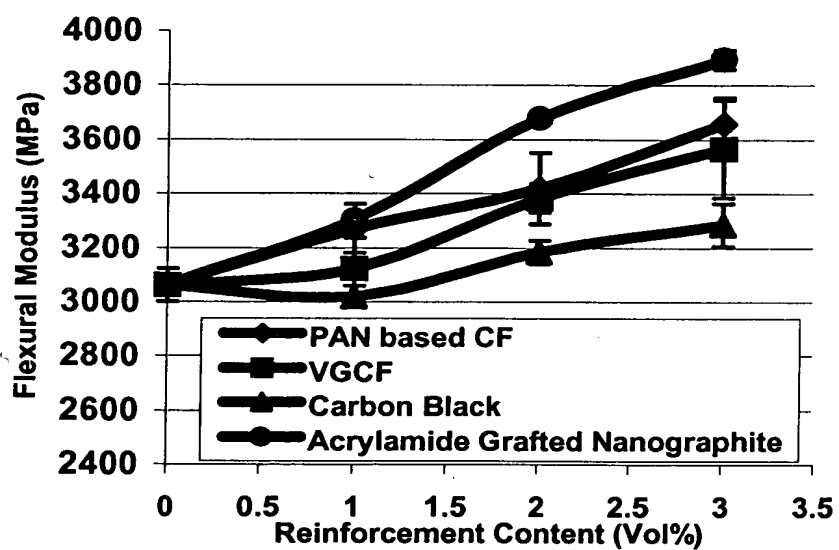
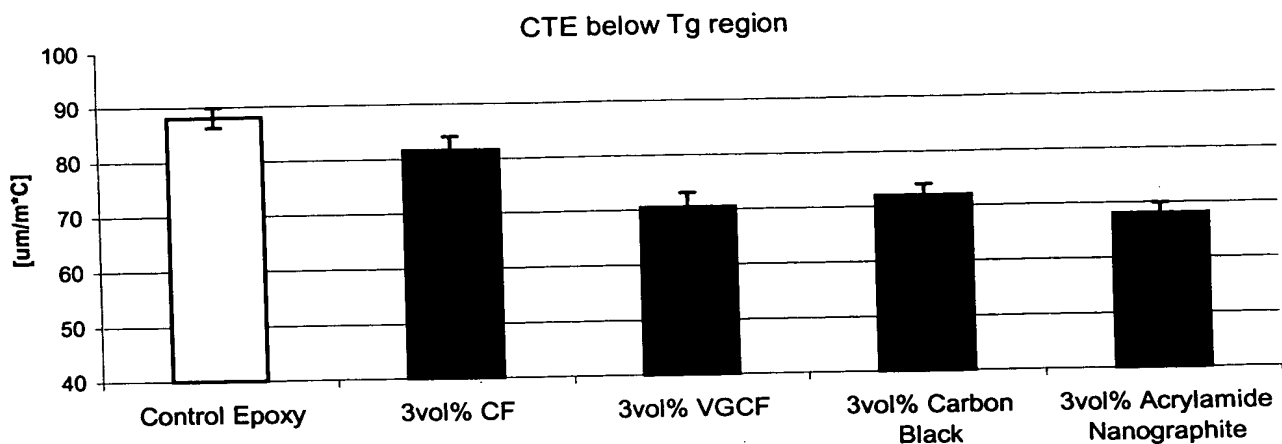
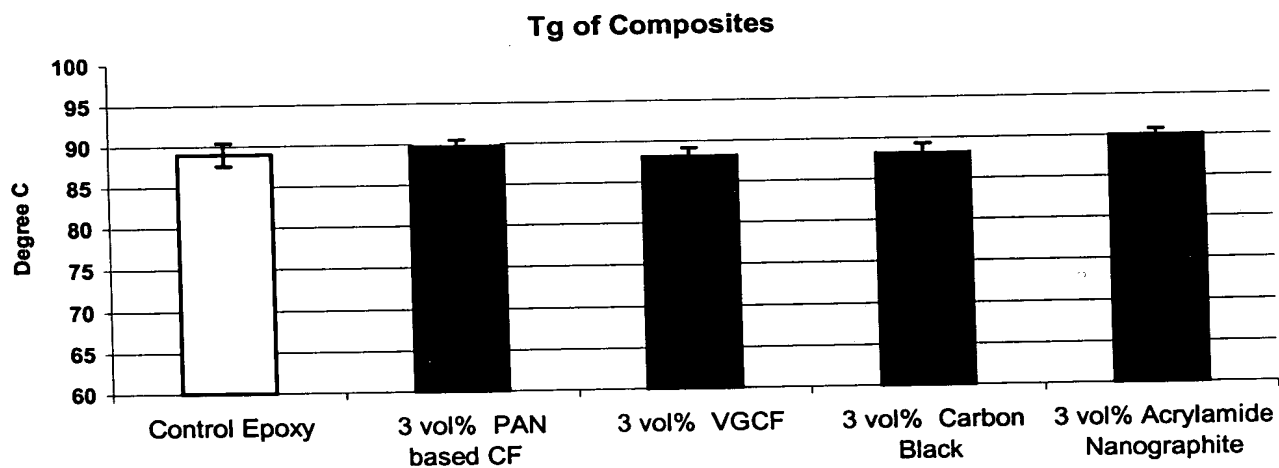


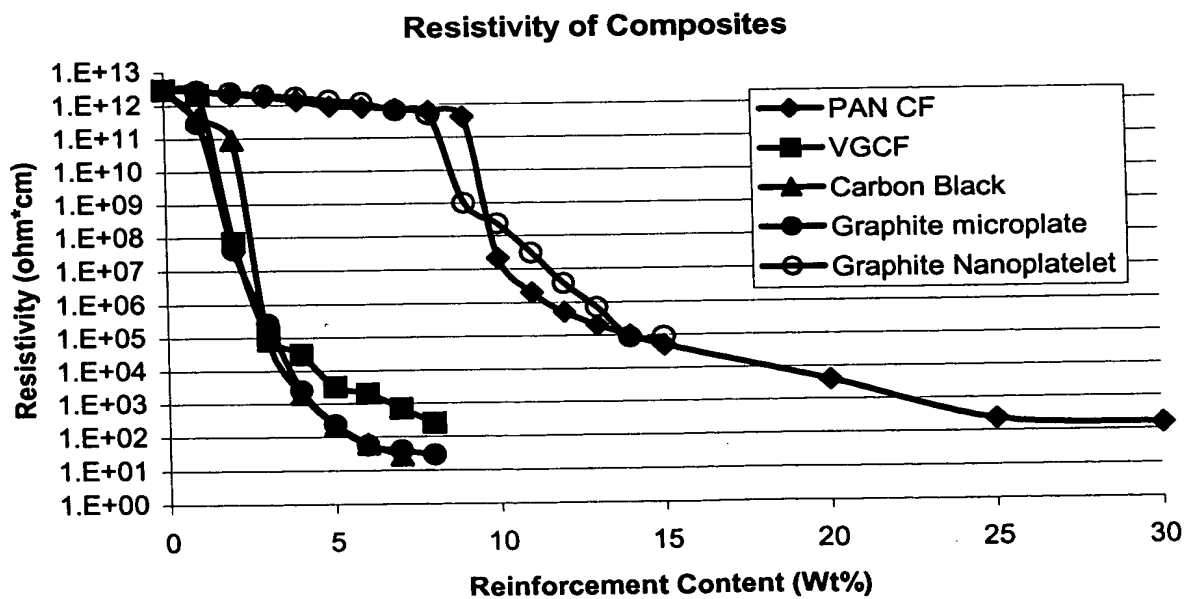
FIG. 32



**FIG. 33**



**FIG. 34**



**FIG. 35**



# Resistivity of Composites Comparison to Other Carbon Materials

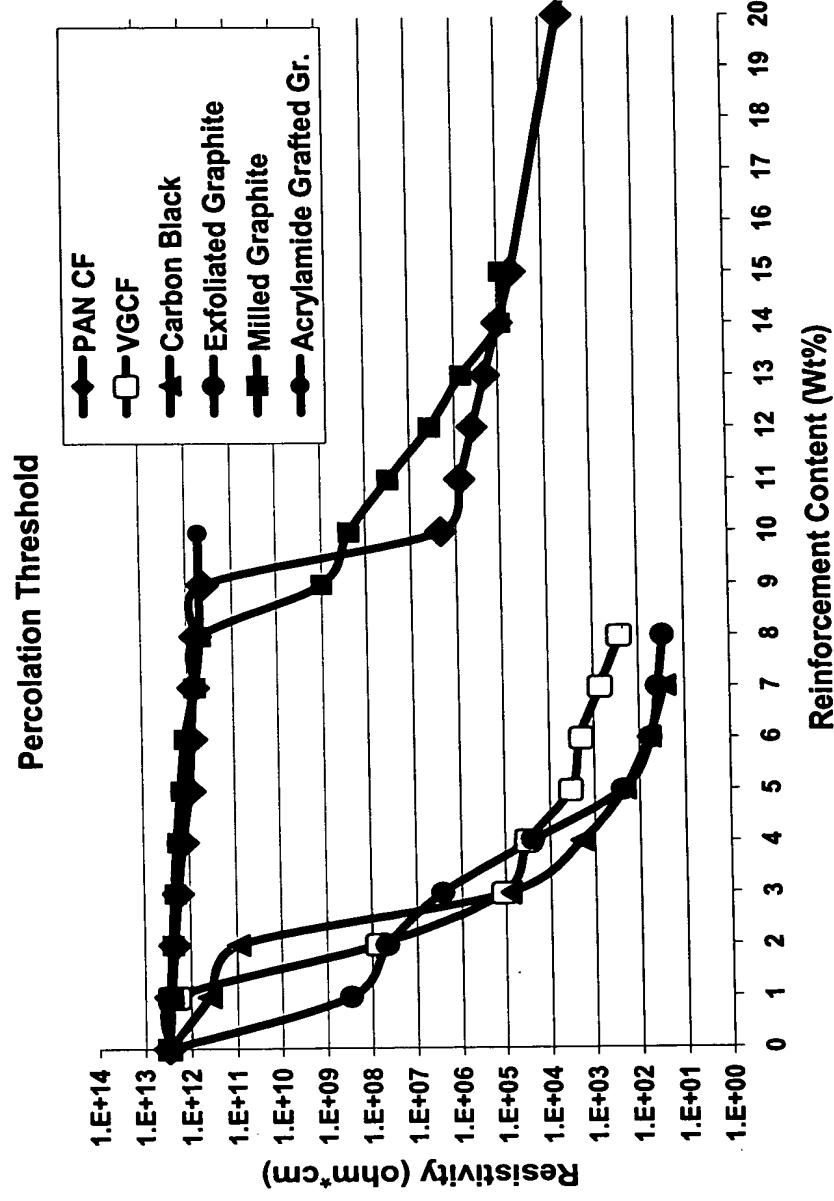


FIG. 36

# Impact Strength of Composites

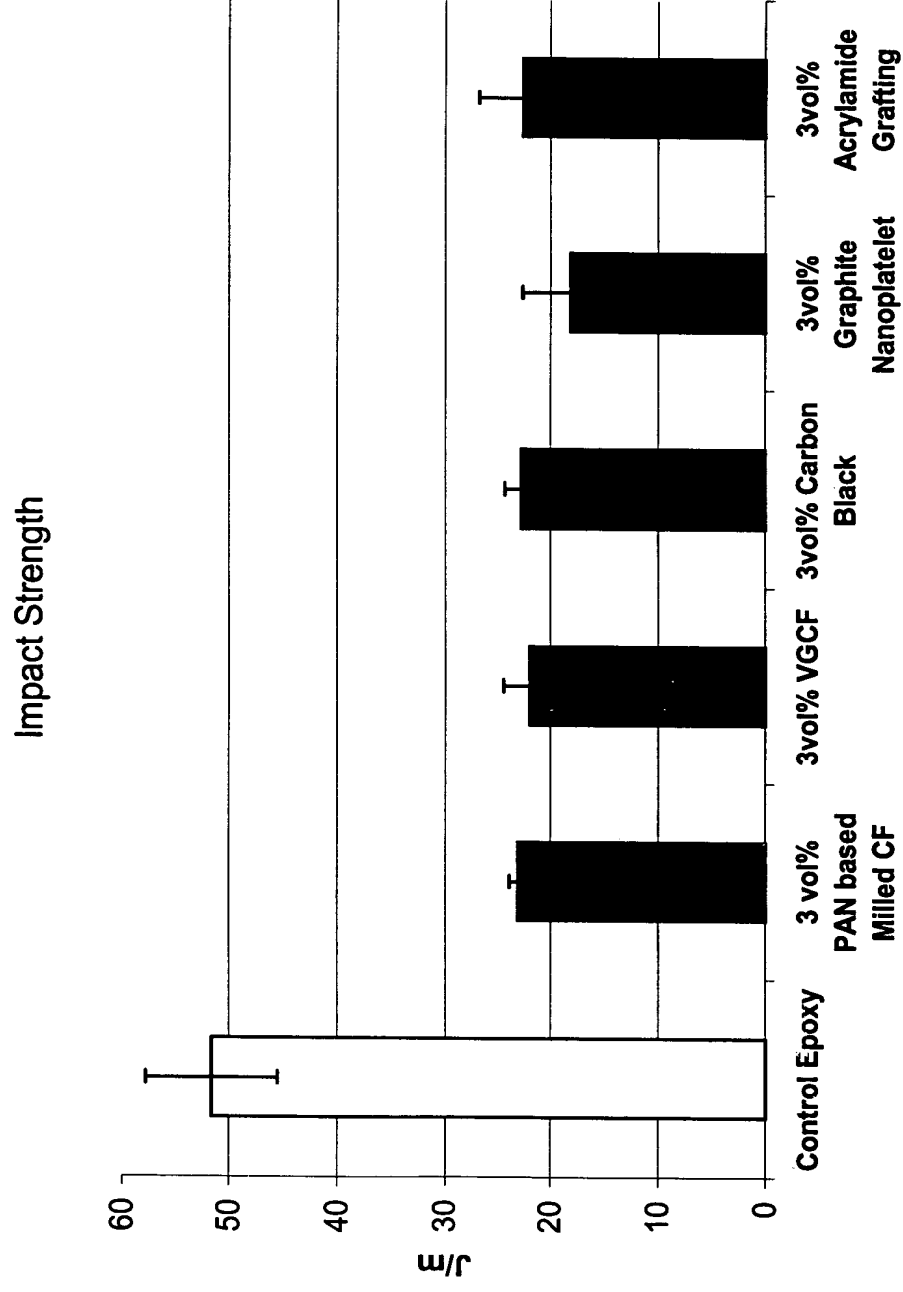
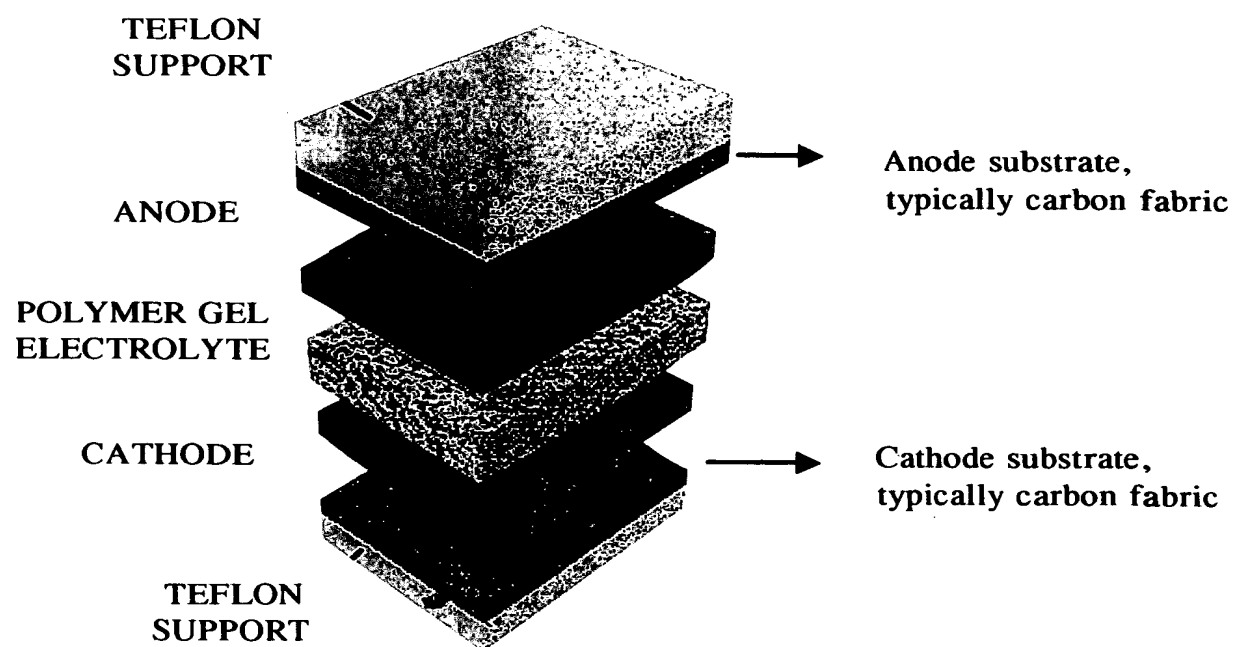


FIG. 37



**FIG. 38**

FIG. 39

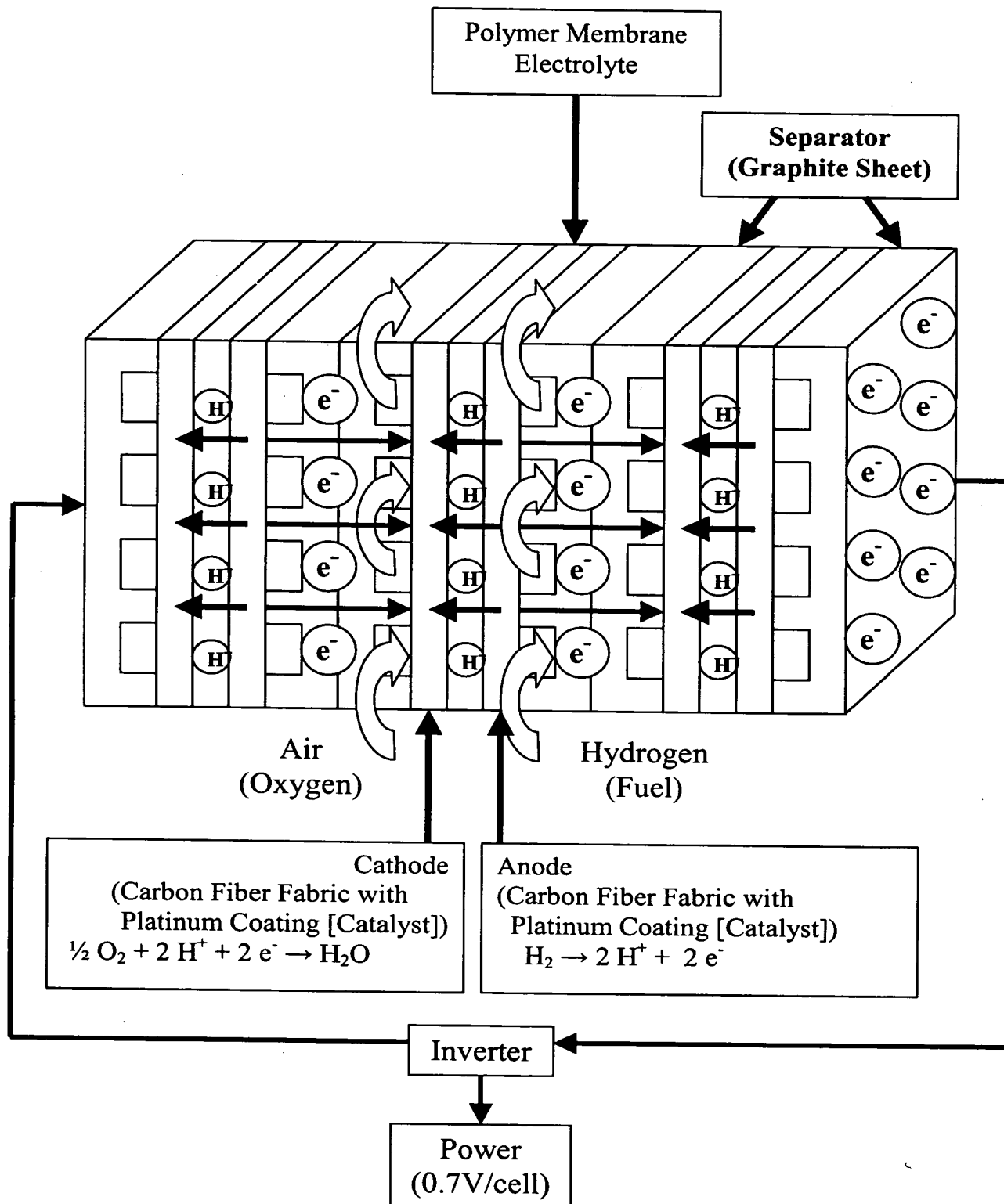


FIG. 40

